DMX REFERENCE

Kling Tile

Kling Tile 144

Cameo



Manufacturer	Cameo
GDTF file	Cameo_Kling_Tile_24443.gdtf
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1 About this manual

This document describes the Kling Tile 144 by Cameo. It was compiled from the GDTF file Cameo_Kling_Tile_24443.gdtf from the GDTF-Share library.

File revision: “test it now”.

The DMX modes, the channel functions and the technical data are given as the GDTF file states them. Installation, operation from the device's control panel, service and safety instructions are described in the manufacturer's original user manual, which takes precedence over this document.

This document was not issued or endorsed by Cameo; product names and trademarks belong to their owners.

Safety notices are marked with signal words according to the severity of the hazard: DANGER – an imminent hazard that will result in death or serious injury; WARNING – a potential hazard that could result in death or serious injury; CAUTION – a potential hazard that could result in minor injury or property damage; NOTE – additional information for correct and safe use.

> **NOTE** This product is designed for stage and effect lighting. It is not suitable for household room illumination.

2 Quick reference

Parameter	Value
Power consumption	65 W
Weight	2.9 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
8 CH Mode	8	64	1, 9, 17, 25, ...
432 CH Mode	432	1	1

No light? Check these channels

- 8 CH Mode: CH 1 Dimmer above 0


Read the manual before use


Risk of electric shock


Do not stare into the light


Indoor use only

3 Safety instructions


Read the manual before use


Risk of electric shock


Do not stare into the light


Indoor use only

⚠ WARNING

- This device is intended for professional use. Installation, connection, setup and maintenance must be carried out only by suitably qualified persons who have read this manual.
- Use the device only for its intended purpose and as described in this manual.
- Do not open the housing and do not modify or tamper with the device. Refer all repairs to an authorized service center.
- Do not use the device if its housing, power or data cable, or a connector is damaged, if the device has been dropped, or if liquid or a foreign object has entered it. In such a case, have it checked by a service center.
- Disconnect the device from the power supply before cleaning, maintenance or any work on the connections.
- After moving the device from a cold to a warm environment, let it reach room temperature before switching it on to prevent condensation inside.
- The device is not a toy; keep it out of the reach of children.

⚠ WARNING

- Connect the device only to a properly installed mains outlet with a protective earth (ground) contact. The outlet or other means of disconnection must remain easily accessible.
- Power supply: 100–240 V, 50/60 Hz. Before connecting, make sure that the mains voltage matches this value and the value on the rating plate of the device.
- Do not connect the device to a dimmer or to a dimmed circuit.
- Use only the original power cable or a cable with identical ratings. Protect the cable from damage, do not run it over sharp edges, and never unplug it by pulling on the cable.
- When connecting several devices to one circuit, do not exceed its permitted load.
- Do not touch the device with wet hands.

⚠ WARNING

- This device is designed for indoor use only. Protect it from rain, splashing water, moisture and dust, and do not place containers with liquids on it.
- Do not operate the device in high humidity, near water, or where condensation can form on it.

⚠ CAUTION

- This device emits intense light. Do not look directly into the light source or the beam at close range; doing so may damage your eyes.
- Do not aim the beam at the eyes of people or animals at close range, and do not view the light source through optical instruments (binoculars, camera lenses).
- Do not aim the beam at flammable or heat-sensitive materials at close range.

⚠ **CAUTION**

- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them longer than necessary.

4 Installation

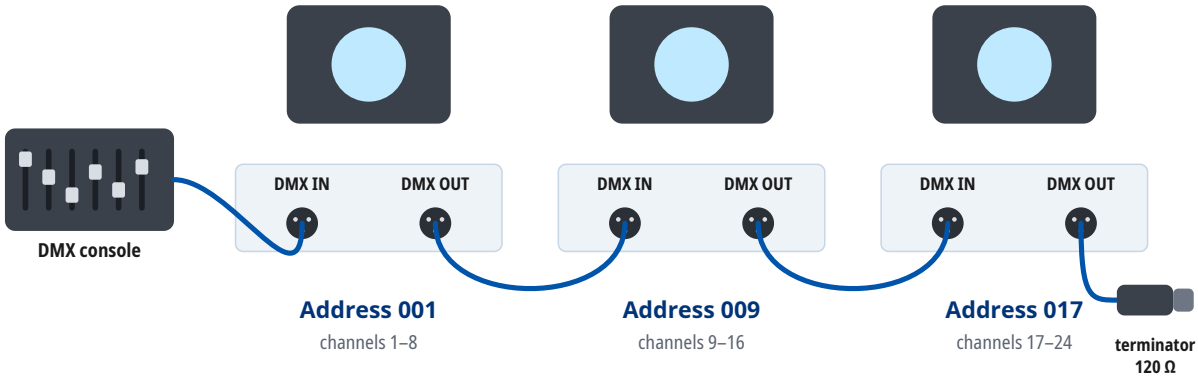
⚠ **WARNING**

- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 2.9 kg.
- Use suitable mounting hardware (for example truss clamps) and tighten all screw connections properly.
- Always secure the suspended device against falling with a safety cable of adequate load capacity, routed through a fixed point of the device and around the supporting structure.
- During installation and removal, keep people out of the area below the work position.
- Regularly inspect the fixings and the safety cable for damage, corrosion and loosening.

5 Connections

- Use shielded cable designed for DMX512 with an impedance of 110 Ω. Ordinary microphone cable is not suitable for DMX, especially over longer distances.
- Connect the devices in a daisy chain: connect the DMX OUT of one device to the DMX IN of the next. Do not split the line with Y-cables or wire it in a star; the line may be split only with a DMX splitter.
- Connect the shield to pin 1 only. Do not connect the shield (ground) to the metal shell of the connector; this can cause short circuits or erratic behavior.
- XLR pin assignment: pin 1 – shield (ground), pin 2 – Data- (Data Complement), pin 3 – Data+ (Data True). On 5-pin connectors, pins 4 and 5 are not connected; a 5-pin connector can be connected to a 3-pin one with a cable adapter.
- Terminate the end of the line (for impedance matching): plug an XLR connector with a 120 Ω, ¼ W resistor between pins 2 and 3 into the DMX OUT of the last device. This reduces the risk of erratic behavior.
- Connect no more than 32 devices to one DMX line. For more devices or longer runs, use a DMX splitter or booster.

DMX line



Mode 8 CH Mode: every unit occupies 8 channels from its address. At most 32 units on one line; for more units or longer runs use a DMX splitter. A 120 Ω terminator closes the last DMX OUT.

6 Operation

Setting the DMX address

- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in the DMX mode “432 CH Mode”: 432.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied channel does not exceed 512. Devices with the same start address and mode respond identically.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

7 Functions at a glance

Functions in each DMX mode

	8 CH Mode 8 channels	432 CH Mode 432 channels
Dimmer	1	✓
Shutter / strobe	2	
Color mixing	3–5	1–432
Color wheel	6	
Effects / macros	7, 8	

Color wheel

1 Red
DMX 6

2 Amber
DMX 14

3 Yellow Warm
DMX 22

4 Yellow
DMX 30

5 Green
DMX 38

6 Turquoise
DMX 46

7 Cyan
DMX 54

8 Blue
DMX 62

9 Lavender
DMX 70

10 Mauve
DMX 78

11 Magenta
DMX 86

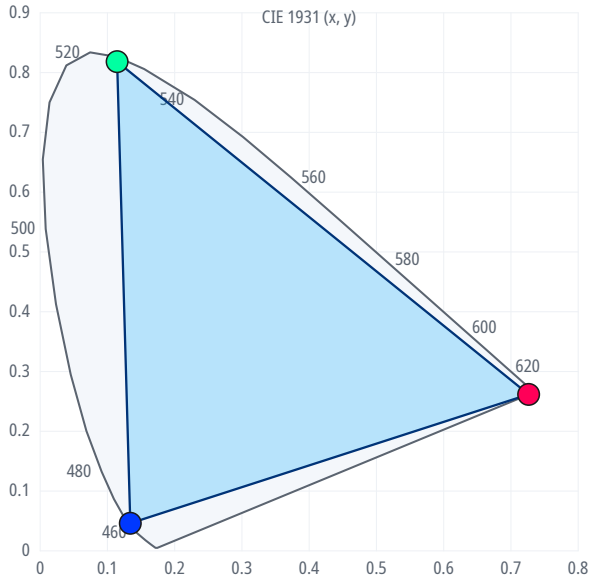
12 Pink
DMX 94

13 Warm White
DMX 102

14 White
DMX 110

15 Cold White
DMX 118

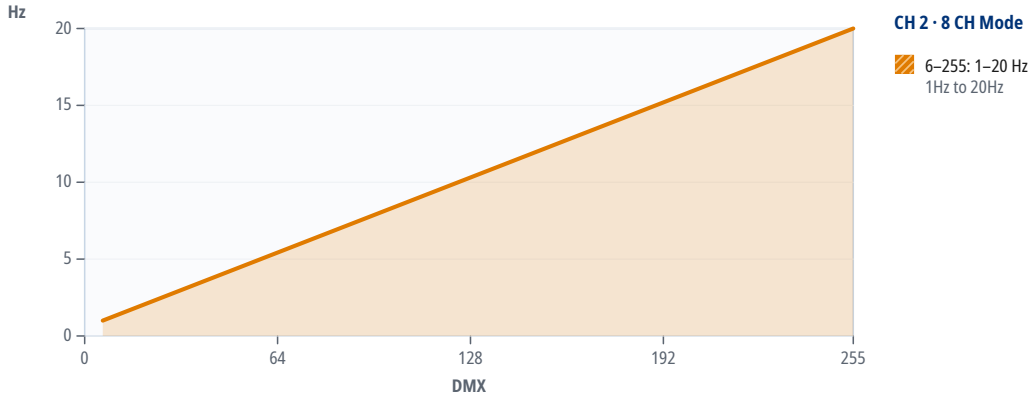
LED colors and the colors they mix



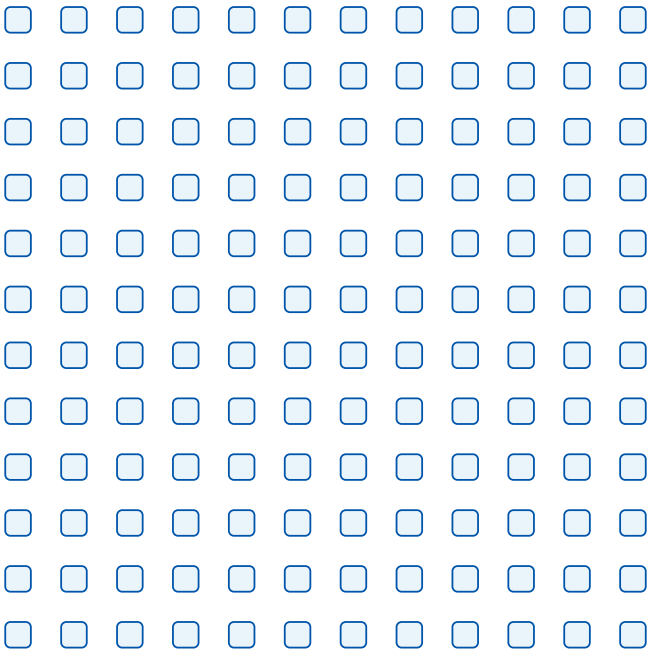
LED	x	y
Emitter 1	0.726	0.262
Emitter 2	0.114	0.818
Emitter 3	0.134	0.046

The shaded area holds the colors the LEDs can mix; the dots are the LED colors the GDTF file states.

Strobe rate



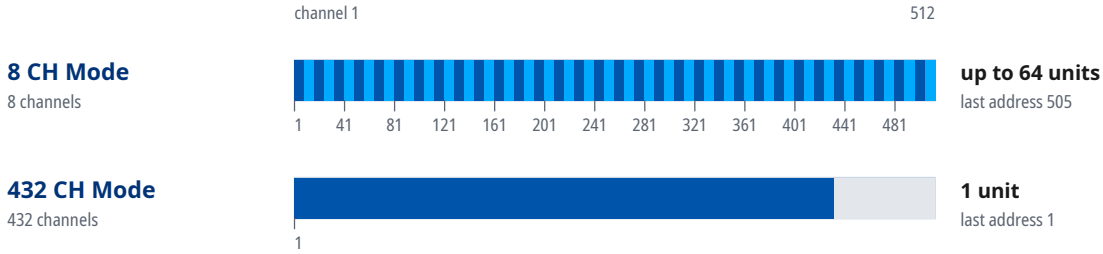
Cells (pixels)



Cells where the GDTF file places them (seen from above), 144 in all in the mode “8 CH Mode”.

8 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “432 CH Mode”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	U6 · 1	11	U11 · 1	16	U16 · 1
2	U2 · 1	7	U7 · 1	12	U12 · 1	17	U17 · 1
3	U3 · 1	8	U8 · 1	13	U13 · 1	18	U18 · 1
4	U4 · 1	9	U9 · 1	14	U14 · 1	19	U19 · 1
5	U5 · 1	10	U10 · 1	15	U15 · 1	20	U20 · 1

Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 8 CH Mode

If the device receives DMX in this mode but gives no light, check these channels: CH 1 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 1 Dimmer 255.

CH	Function	DMX	Description
1	Dimmer	0–255	
2	Shutter	0	Strobe open
		1–5	Shutter
		6	1 Hz
		7–254	1 Hz ... 20 Hz
		255	20 Hz
3	Red	0–255	Red
4	Green	0–255	Green
5	Blue	0–255	Blue
6	Colors	0–5	Color Macro
		6	Red
		7–13	Red ... Amber
		14	Amber
		15–21	Amber ... Yellow Warm
		22	Yellow Warm
		23–29	Yellow Warm ... Yellow
		30	Yellow
		31–37	Yellow ... Green

CH	Function	DMX	Description
6	Colors (continued)	38	Green
		39–45	Green ... Turquoise
		46	Turquoise
		47–53	Turquoise ... Cyan
		54	Cyan
		55–61	Cyan ... Blue
		62	Blue
		63–69	Blue ... Lavender
		70	Lavender
		71–77	Lavender ... Mauve
		78	Mauve
		79–85	Mauve ... Magenta
		86	Magenta
		87–93	Magenta ... Pink
		94	Pink
		95–101	Pink ... Warm White
		102	Warm White
		103–109	Warm White ... White
		110	White
		111–117	White ... cold White
		118	Cold White
		119–125	Color Macro
		126	Colour run 1 to 12
		127	Colour Jumping Stop
		128	Colour Jumping Stop ... Colour Jumping Speed slow to fast
		129–192	Colour Jumping Speed slow to fast (19.6–800 °/s)
		193–255	Colour Fading Speed slow to fast (19.6–800 °/s)
7	Effects		Auto Program
		0	Control by Channel 2-6
		1–5	Control by Channel 2-6 ... Program 1
		6	Program 1
		7–10	Program 1 ... Program 2
		11	Program 2
		12–20	Program 2 ... Program 3
		21	Program 3
		22–31	Program 3 ... Program 4
		32	Program 4
		33–42	Program 4 ... Program 5
		43	Program 5
		44–53	Program 5 ... Program 6
		54	Program 6
		55–64	Program 6 ... Program 7

CH	Function	DMX	Description
7	Effects (continued)	65	Program 7
		66–75	Program 7 ... Program 8
		76	Program 8
		77–86	Program 8 ... Program 9
		87	Program 9
		88–97	Program 9 ... Program 10
		98	Program 10
		99–108	Program 10 ... Program 11
		109	Program 11
		110–119	Program 11 ... Program 12
		120	Program 12
		121–130	Program 12 ... Program 13
		131	Program 13
		132–141	Program 13 ... Program 14
		142	Program 14
		143–152	Program 14 ... Program 15
		153	Program 15
		154–163	Program 15 ... Program 16
		164	Program 16
		165–174	Program 16 ... Program 17
		175	Program 17
		176–185	Program 17 ... Program 18
		186	Program 18
		187–196	Program 18 ... Program 19
		197	Program 19
		198–207	Program 19 ... Program 20
		208	Program 20
		209–218	Program 20 ... Program 21
		219	Program 21
		220–229	Program 21 ... Program 22
		230	Program 22
		231–240	Program 22 ... Program 23
		241	Program 23
		242–250	Program 23 ... Program 24
		251	Program 24
		252–255	Auto Program
8	Effects Speed		Auto Program Speed
		0	Slow
		1–254	Slow ... fast
		255	Fast

Mode 432 CH Mode

The GDTF file gives these values for a console's Highlight function: CH 1 Red 255 (the same in each of the 144 cells), CH 2 Green 255 (the same in each of the 144 cells), CH 3 Blue 255 (the same in each of the 144 cells).

CH	Function	DMX	Description
1	Red 1	0–255	Red
2	Green 1	0–255	Green
3	Blue 1	0–255	Blue

CH 1–432: 144 cells of 3 channels each. Every cell works as cell 1 in the table above (CH 1–3); the table below gives each cell's channel numbers.

Cell	Red	Green	Blue	Cell	Red	Green	Blue	Cell	Red	Green	Blue
1	1	2	3	2	4	5	6	3	7	8	9
4	10	11	12	5	13	14	15	6	16	17	18
7	19	20	21	8	22	23	24	9	25	26	27
10	28	29	30	11	31	32	33	12	34	35	36
13	37	38	39	14	40	41	42	15	43	44	45
16	46	47	48	17	49	50	51	18	52	53	54
19	55	56	57	20	58	59	60	21	61	62	63
22	64	65	66	23	67	68	69	24	70	71	72
25	73	74	75	26	76	77	78	27	79	80	81
28	82	83	84	29	85	86	87	30	88	89	90
31	91	92	93	32	94	95	96	33	97	98	99
34	100	101	102	35	103	104	105	36	106	107	108
37	109	110	111	38	112	113	114	39	115	116	117
40	118	119	120	41	121	122	123	42	124	125	126
43	127	128	129	44	130	131	132	45	133	134	135
46	136	137	138	47	139	140	141	48	142	143	144
49	145	146	147	50	148	149	150	51	151	152	153
52	154	155	156	53	157	158	159	54	160	161	162
55	163	164	165	56	166	167	168	57	169	170	171
58	172	173	174	59	175	176	177	60	178	179	180
61	181	182	183	62	184	185	186	63	187	188	189
64	190	191	192	65	193	194	195	66	196	197	198
67	199	200	201	68	202	203	204	69	205	206	207
70	208	209	210	71	211	212	213	72	214	215	216
73	217	218	219	74	220	221	222	75	223	224	225
76	226	227	228	77	229	230	231	78	232	233	234
79	235	236	237	80	238	239	240	81	241	242	243
82	244	245	246	83	247	248	249	84	250	251	252
85	253	254	255	86	256	257	258	87	259	260	261
88	262	263	264	89	265	266	267	90	268	269	270
91	271	272	273	92	274	275	276	93	277	278	279

Cell	Red	Green	Blue	Cell	Red	Green	Blue	Cell	Red	Green	Blue
94	280	281	282	95	283	284	285	96	286	287	288
97	289	290	291	98	292	293	294	99	295	296	297
100	298	299	300	101	301	302	303	102	304	305	306
103	307	308	309	104	310	311	312	105	313	314	315
106	316	317	318	107	319	320	321	108	322	323	324
109	325	326	327	110	328	329	330	111	331	332	333
112	334	335	336	113	337	338	339	114	340	341	342
115	343	344	345	116	346	347	348	117	349	350	351
118	352	353	354	119	355	356	357	120	358	359	360
121	361	362	363	122	364	365	366	123	367	368	369
124	370	371	372	125	373	374	375	126	376	377	378
127	379	380	381	128	382	383	384	129	385	386	387
130	388	389	390	131	391	392	393	132	394	395	396
133	397	398	399	134	400	401	402	135	403	404	405
136	406	407	408	137	409	410	411	138	412	413	414
139	415	416	417	140	418	419	420	141	421	422	423
142	424	425	426	143	427	428	429	144	430	431	432

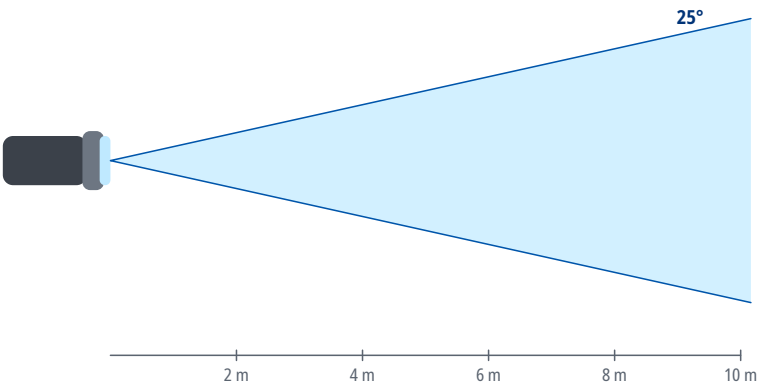
9 Technical specifications

Parameter	Value
Light source	LED
DMX connection	3-pin XLR IN/OUT
RJ45 connectors	RJ45 IN/OUT
Power supply	100–240 V, 50/60 Hz
Power consumption	65 W
Weight	2.9 kg
Operating temperature	0 to 40 °C

Speeds and ranges

Parameter	Value
Strobe frequency	1–20 Hz
Color wheel rotation	up to 800 °/s (133 rpm)

Spot diameter



Distance	Ø 25°
2 m	0.89 m
4 m	1.8 m
6 m	2.7 m
8 m	3.5 m
10 m	4.4 m
15 m	6.7 m

Spot diameter square to the beam axis, calculated from the beam angle.

10 Maintenance and cleaning

- Before cleaning and maintenance, switch the device off, disconnect it from the power supply and let it cool down.
- Clean the housing with a soft, dry or slightly damp cloth. Do not use solvents, abrasive cleaners or pressure washers, and make sure no liquid gets into the device.
- Clean optical parts (lenses, front glass), if the device has any, with a soft lint-free cloth and a cleaner intended for optics or glass.
- Regularly inspect the housing, cables, connectors and fixings. Have damaged parts replaced by a service center.
- How often to clean depends on the environment; dust, smoke and fog make the device dirty much faster.

11 Troubleshooting

Problem	Remedy
The device does not switch on	Check the supply voltage, the cables and the fuse, if the device has one.
The device does not respond to DMX	Check the start address, the selected DMX mode and whether it matches the profile in the controller, the cable connection to DMX IN, and the controller output (universe).
The device behaves erratically or flickers	Check the terminator at the end of the line, the condition and wiring of the cables (shield on pin 1 only), the number of devices on the line (32 at most), and that the line is not split without a splitter.
Only some devices on the line respond	Check the cable and connectors between the last working and the first non-working device, and make sure all devices on the line are switched on.
Devices respond to the wrong channels or affect each other	Check that the addresses do not overlap and that the DMX mode on the devices matches the patch in the controller.
The device or the connected load does not light up although it receives DMX	Check the values of the dimmer, shutter and strobe channels against the DMX channel table. For the DMX modes for which the sources state it, the chapter DMX channels gives under the mode's heading which channels must be open.

12 Disposal

The crossed-out wheeled bin symbol on the product, in the manual or on the packaging means that the product must not be disposed of with unsorted household waste at the end of its life.

Take the end-of-life equipment to a collection point, for example a municipal collection site or a retailer. Proper disposal enables materials to be recycled and helps prevent possible negative effects on the environment and human health.

Follow the regulations applicable in your country; in the Czech Republic, take-back is governed by Act No. 542/2020 Coll., on End-of-Life Products.

Recycle the packaging materials according to their type.